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HERBERT HUNTINGDON SMITH.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

THE ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. XXX. OCTOBER, 1919. No. 8.

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Herbert Huntingdon Smith.

(Portrait, Plate IX)

In the death of Herbert Huntingdon Smith, which occurred on March 22, 1919, at Tuscaloosa, Alabama, the world lost one of the most indefatigable and successful field-naturalists who has ever lived. In recent years Mr. Smith was afflicted by deafness, and was struck by a railway train, of the approach of which he was unaware, and was instantly killed. He was born at Manlius, New York, on January 21, 1851, and was therefore in his sixty-ninth year at the time of his death. He leaves his widow, Mrs. Amelia Woolworth Smith, and an only son, Huntingdon Holland Smith, the latter a successful young man of affairs, residing at Atlanta, Georgia.

Mr. Smith was well known in scientific and literary circles. While still a student at Cornell University in 1870, he accompanied his friend and teacher, the late Prof. C. F. Hartt, to Brazil. In 1874 he returned to Brazil and spent more than three years in making natural history collections in the vicinity

of Santarem, on the northern tributaries of the Amazons, and on the Tapajos, concluding his stay in the country by a sojourn of some months in the neighborhood of Rio de Janeiro. Shortly after his return to the United States he was commissioned by the Messrs. Scribner to write a series of articles for their magazine upon Brazil and twice revisited the country, on one trip being accompanied by an artist, who was employed to illustrate the papers he wrote. One of the results of these journeys was the volume entitled "Brazil, the Amazons, and the Coast," which was issued from the press of the Scribners in 1879. In the fall of 1880 he married Miss Amelia Woolworth Smith of Brooklyn, N. Y., and together they repaired to Brazil, residing there until the spring of 1886, making their headquarters at Rio de Janeiro, but traveling extensively in all parts of the country and making great collections of natural history specimens. A volume in the Portuguese tongue entitled "De Rio de Janeiro á Cuyabá" was one of the by-products of these years of travel and research. The year 1889 was passed in Mexico, where extensive collections were made for Mr. F. Ducane Godman, who was engaged in the preparation of his monumental work, the "Biologia Centrali-Americana." From 1890-1895 he spent much of his time in the employment of the West Indian Commission of the Royal Society in making a biological survey of Trinidad and the Windward Islands. At the same time he was engaged in writing and editing as a member of the staff of the "Century Dictionary," the "Century Cyclopedia of Names," and "Johnson's Cyclopedia." In these works almost everything relating to South and Central America and their fauna and flora is from his pen. From 1897-1903 he was most of the time in the employment of the Carnegie Museum, three years being spent in collecting in the province of Santa Marta in Colombia. From 1904 until his death he resided in Alabama, during the last ten years of his life being the curator of the Museum at the University of Alabama.

Mr. Smith was interested in all branches of zoology and botany. He collected vertebrates and invertebrates equally

well. In Colombia he made a vast collection of plants. In every field a multitude of new and undescribed species rewarded his diligence. The literature of science for the past thirty or more years so far as it contains descriptions of new or little known neotropical species is everywhere replete with the notation "(*H. H. Smith* coll.)."

The writer has not been able to command the time to make a search for the total of new species which he turned up and which have so far been described, but ventures with perfect confidence the assertion that such species must already aggregate several thousands.

The work done by Mr. Smith in the field of entomology was particularly great. The entomological collections made by him are mainly contained in the National Museum at Rio de Janeiro, in the British Museum (derived from the gift of the collections of F. D. Godman) and in the Carnegie Museum, though parts of his collections are scattered widely in other museums. There are in the Carnegie Museum in the neighborhood of 25,000 species of Brazilian Coleoptera assembled by him and many thousands of species of insects in other orders. A memorandum recently received by the writer from Mrs. Smith states that the Arthropoda collected during the years of Mr. Smith's journeys in Brazil up to May, 1886, aggregated approximately 40,000 species, distributed as follows:

Hymenoptera	5,000
Diptera	2,500
Lepidoptera	2,600
Coleoptera	23,000
Hemiptera	3,300
Orthoptera	600
Neuroptera	300
Arachnida	2,000
Crustacea	250
Total	39,550 species

The collections contained an aggregate of at least half a million of individual specimens. Portions of the collections have been carefully studied and reported upon. Ashmead, Cresson, and others have in part worked over the Hymen-

optera. Williston did something with part of the Diptera. The Lepidoptera so far as they represented the species of Middle-America were studied by Godman and by Herbert Druce. Champion wrote up a part of the Coleoptera, but the beetles of Brazil as a whole remain for the most part to be studied; P. R. Uhler has described many of the Hemiptera, as did also W. L. Distant. The Orthoptera have been studied by Dr. Lawrence Bruner and the Odonata by Dr. P. P. Calvert.

Nevertheless there remains a residuum of unstudied and undetermined material in England and America garnered by H. H. Smith which still calls for attention and which probably represents many thousands of nondescript species, especially among the micro-coleoptera.

Herbert H. Smith and William Doherty, both Americans, were undoubtedly the two ablest zoological collectors in the field during the last two decades of the Nineteenth and the first decade of the Twentieth Century.

W. J. HOLLAND.

Ocean House, Watch Hill, R. I., Aug. 25, 1919.

Two new Crane-flies from California (Tipulidae, Diptera).

By CHARLES P. ALEXANDER, State Laboratory of Natural History, Urbana, Illinois.

Erioptera (Acyphona) sparsa sp. n.

General coloration yellow; femora with a narrow dark-brown band just before the tips; wings subhyaline with sparse brown markings.

♀. Length 5.8 mm.; wing 6.4 mm.

Rostrum and palpi dark brown. Antennae with the basal segments yellowish, the apical half brown. Head dark.

Mesonotal praescutum dull yellow with three brown stripes; scutellum yellowish. Pleura more infumed. Halteres pale, the knobs orange-yellow. Legs with the coxae dull yellow: trochanters yellow; femora yellowish with a narrow brown ring that is close before the tip; tibiae yellow, the tips narrowly and indistinctly darkened; tarsi brown, the metatarsi paler basally. Wings pale yellowish subhyaline with dark-brown markings, including a narrow seam along the cord; small spots at the base of the wing and the origin of the sector;

larger marks at the ends of the longitudinal veins, $R4+5$ excepted. Venation: Similar to the closely related *E. armillaris*, but *m* slightly before midlength of $M3$.

Abdomen dull yellow, the pleural region brownish. Ovipositor very long and slender.

Holotype: ♀, Berkeley, California, May 28, 1915 (M. C. Van Duzee).

Type in the collection of the author.

E. sparsa is very similar to *E. armillaris* O. S. of the Eastern United States, but the wings are paler with a much more restricted pattern, the marks at the origin of the sector and the ends of the anal veins small, and the femoral brown ring narrow and closer to the tips.

Limnophila hepatica sp. n.

General coloration dark liver-brown, the thorax unstriped; wings with a faint brownish suffusion, the stigma and a blotch at *r-m* brown.

♀. Length 7.5 mm.; wing 8 mm.

Rostrum and palpi dark brown. Antennae dark brown, the first scapal segment elongated. Head dark gray.

Mesonotum dark liver-brown, shiny, without stripes, the postnotum a little more reddish. Pleura dark brown, the dorsopleural membranes more yellowish. Halteres pale, the knobs a little darkened, the stems rather elongated. Legs with the coxae yellowish, the fore coxae a little darkened; trochanters yellowish; legs except the fore pair broken, these latter with the femora dark brown, the basal quarter more yellowish; tibiae and tarsi dark brown. Wings with a faint brown suffusion; stigma large, oval, dark brown; a brownish cloud on *r-m* and adjoining veins; base of the wing slightly yellowish; veins dark brown. Venation: $Sc1$ ending opposite the basal deflection of $R4+5$; *r* removed from the tip of $R1$; *Rs* long; $R2+3$ a little shorter than the basal deflection of $Cu1$; *r-m* in alignment with the basal deflections of $R4+5$ and $M1+2$; cell 1*st* $M2$ small; petiole of cell $M1$ about as long as this cell; basal deflection of $Cu1$ slightly beyond midlength of cell 1*st* $M2$.

Abdominal tergites dark brown, the basal shield of the ovipositor dull black, the valves long and slender, rusty in color; sternites dull yellowish.

Holotype: ♀, Fieldbrook, California, May 18, 1903 (H. S. Barber).

Type in the collection of the United States National Museum.

A New Species of Argynnis from Utah (Lepid., Rhop.).

By HENRY SKINNER.

Argynnis utahensis, n. sp.

Upperside. Primaries dull fulvous with the extra discal rounded spots as in *Argynnis chitone* except that the spots near the apex are somewhat smaller than in that species and they are not so black and well pronounced. The basal area of the wing is not nearly so dark as in *chitone.*

Secondaries are the same color as the primaries with the usual black markings. The base of the wing is not obscured by dark scales as is the case in some of the allied species.

Underside. Primaries relatively light in color with two spots near the apex and three of the submarginal lunules faintly silvered.

Secondaries much as in *chitone,* but lighter in color with less black around the silver spots. Some specimens are devoid of silver spots.

The female is like the male, but slightly larger, and the base of the primaries is much redder than in the male.

This is the species that has always been confused with *chitone* Edw. It can be readily differentiated by less black on the basal areas above and below and by the generally lighter colors.

The male expands 53 mm. and the female 55 mm.

The *type* was taken by the writer in City Creek Canyon, Salt Lake City, Utah, July 6th, and the allotype at Silver Lake, Brightons, Utah, July 12th. There are nine paratypes from City Creek Canyon, taken on the 4th to the 6th of July. Fourteen specimens from Ogden, Utah, and four from Park City, Utah, taken by A. J. Snyder in the first half of July. Three specimens from Provo, Utah, taken by T. Spalding in July, and four specimens from David Bruce labelled "Utah."

The types and other specimens are in the collection of The Academy of Natural Sciences of Philadelphia.

Costa Rican Butterflies (Lepid., Rhop.).

On December 30th (1918) I took on the Cairo branch a female of *Hypolimnas misippus,* which may be a first record for Costa Rica.

We have found larvae and reared them, on *Hygrophila confuta* (Acanthaceae), of *Amphirene epaphus,* though as this is so common a species, it is unlikely to confine itself to that plant and probably affects other species of the same family. The larva is very handsome, velvety black with pale yellow bars at the segments, the chrysalis grass green.—C. H. LANKESTER, Cartago, Costa Rica.

A New Tylocentrus from Arizona (Membracidae; Homoptera).

By W. D. FUNKHOUSER.*

(Plate X)

The genus *Tylocentrus* VanDuzee was erected for the accommodation of *T. reticulatus* VanDuzee, described† from specimens from Utah and Arizona. The type species is apparently common throughout the southwestern part of the United States and I have received from Mr. H. H. Knight of Ithaca, New York, a long series of specimens collected by him during the Summer of 1917 in the vicinities of Fabeus, Texas, and Ft. Stockton, Texas. Mr. Knight's field notes record the host-plant of this insect as the "screw-bean" (*Strombocarpa odorata* (Torrey) A. Gray)‡ and the specimen labels bear the dates of July 5 for the Ft. Stockton material and July 9 for the Fabeus specimens.

Since the description of the type species, the genus has remained monotypic but the following insect must now be added:

Tylocentrus quadricornis sp. nov. (Plate X; Figs. 1, 2, 3 and 4).

Near *Tylocentrus reticulatus* VanDuzee but differing principally in the shape of the head and clypeus, the shape of the posterior process and in having four distinct pronotal horns in the female.

Robust, mottled yellow, brown and black, finely punctate, pubescent; four well developed pronotal horns extending in a row across the dorsum in a line with the humeral angles, the middle pair being the shorter; scutellum plainly exposed, bidentate; posterior process narrow at base, high and arcuate at extremity, slightly elevated above tegmina; tegmina semiopaque, mottled yellow, ferruginous and brown; legs yellow, banded with brown.

Head twice as wide as long, very roughly sculptured, swollen in centre, brown with black markings at margins of eyes and a black spot above each ocellus, finely punctate, closely pubescent with whitish

* Contribution from the Zoological Laboratory of the University of Kentucky.

† VanDuzee, E. P. Studies in North American Membracidae. Bull. Buff. Soc. Nat. Sci. ix, pp. 118-119, pl. 2, figs. 39 and 40. April 18, 1908.

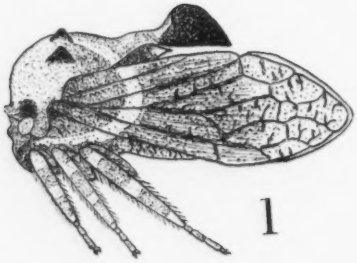
‡ *Syn. Prosopis pubescens* Bentham. ?

hairs; base of head elevated and strongly sinuate, highest above ocelli; eyes gray, elongate, much wider than high; ocelli small, brown, not conspicuous, protruding, about equidistant from each other and from the eyes and situated about on an imaginary line drawn through centers of eyes; inferior margin of genae convex, protruding, sinuate; clypeus three times as long as broad, brown in centre, darker at margins, luteous at tip, extending for more than two-thirds its length below inferior margins of genae, punctate, pubescent, tip rounded, swollen, pilose with long white hairs.

Pronotum yellow with a spot over each eye, the tips of the horns and the apical half of the posterior process black, the area behind the horns and before the base of the posterior process brown, the entire pronotum finely punctate and densely pubescent with white or grayish hairs; metopidium much wider than high, slightly sloping, somewhat convex and swollen in center, entirely light yellow except for a black callosity above each eye; median carina distinctly percurrent; humeral angles large, prominent, triangular, blunt, extending outward almost as far as the suprahumeral horns above them; suprahumeral horns short, heavy, blunt, somewhat flattened dorso-ventrally, about one-fourth as long as the distance between their bases, brown with the tips black, extending outward and upward but not at all forward or backward, apices blunt, roughly carinate and slightly bent downward; between the two suprahumeral horns and on a line with them are two other horns which are short, conical, blunt, yellow with black tips, extending almost directly upward, about equidistant from each other and from the suprahumerals and about as long as the distance between their bases; scutellum plainly exposed on each side, about as long as broad, strongly bidentate, base brown, punctate and pubescent, tip yellow; posterior process short, slightly upraised, basal half narrow and nearly straight, distal half wider and strongly upraised to form a high arcuate crest, this crest longer than high, the tip black and acute and extending almost to the internal angles of the tegmina.

Tegmina semiopaque; base brown, coriaceous, punctate and pubescent; next to the coriaceous base a semicircular whitish fascia; central part of tegmina brown; tip lighter and subhyaline; veins very strong, heavy, brown, with short irregular branches projecting out into the cells. Apparently five apical and three discoidal cells. Marginal membrane very narrow.

Sides of thorax brown, punctate and pubescent. The white arc made by the fascia just before the base of the tegmen is continued downward over the sides of the metathorax and mesothorax and upward over the pronotum by a line of white tomentose pubescence. Abdomen brown, margins of segments lighter. Femora brown; tibiae strongly mottled with alternate patches of brown and yellow, spinose; tarsi flavous; claws brown.



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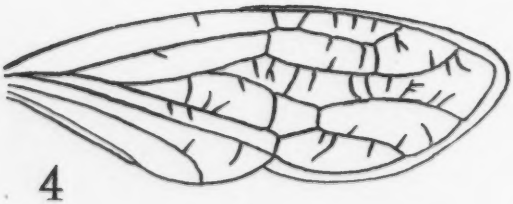

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TYLOCENTRUS QUADRICORNIS.—FUNKHOUSER.

Length including tegmina 5.2 mm.; width between tips of suprahumeral horns 2.8 mm.

Type: female. *Locality*: Lewis Springs, Arizona.

Described from two females collected at Lewis Springs, Arizona, on June 18, 1915, by Mr. Harold Morrison. Mr. Morrison's field notes record that the insects were taken in "miscellaneous beating and sweeping" but no data as to its peculiar host-plant are available. Type and paratype in author's collection.

EXPLANATION OF PLATE X.

Fig. 1. Lateral view of *Tylocentrus quadricornis* sp. nov.
2. Front view of head and thorax.
3. Dorsal outline.
4. Right front wing of type specimen.

Five Non-gall-making Midges (Dip., Cecidomyidae).

By E. P. FELT, Albany, New York.

The members of two subfamilies and one tribe of the third subfamily of our gall midges, make no galls and are of little interest to the students of vegetable deformations. These anomalous gall midges are extremely interesting to the systematist, morphologist and the biologist because in many respects they present most interesting gradations between the gall producers and the series of small flies, living for the most part in decaying vegetable matter.

[The types, presumably, are in the State Museum at Albany. —ED.]

Prionellus eremi n. sp.

The male described below was collected at Brainerd Lake, Boulder County, Colorado, by Prof. T. D. A. Cockerell, dated August 28, and forwarded in April, 1918. This species is allied to *P. hesperia* Felt and *P. latipennis* Felt, from both of which it may be easily separated by its greater size and the relatively longer basal enlargement of the flagellate antennal segments and the relatively shorter fourth palpal segment.

♂. Length 1.5 mm. Antennae nearly as long as the body, sparsely haired, reddish brown, 14 segments, the 5th with a stem ¾ the length

of the subcylindrical basal enlargement, which latter has a length 2¼ times its diameter. Terminal segment reduced, with a length about twice its diameter and tapering to an irregular, rudimentary knob. Palpi: first segment short, quadrate, second a little longer, more slender, third as long as the second, and the fourth about ½ longer than the third.

Mesonotum dark reddish brown. Scutellum reddish brown. Postscutellum yellowish brown.

Abdomen mostly dark yellowish brown, the basal genitalic segments darker.

Wings hyaline; halteres fuscous yellowish. Coxae yellowish brown. Legs mostly fuscous straw, the distal tarsal segments dark brown.

Genitalia: basal clasp segment short, stout, terminal clasp segment short, somewhat swollen distally, tapering and curving to an irregular, obtuse, heavily setose apex.

Type Cecid. A. 2903.

HORMOSOMYIA n. gen.

The genus belongs in the Porricondylariae and may be easily recognized by the five long veins, the cross vein being nearly parallel with costa, the fourth vein simple, weaker than the others and obsolescent basally, the fifth vein simple and the sixth free. The structure of the antennae and the genitalia of the male are most suggestive of *Porricondyla* Rond. from which it is easily separated by alar characters.

Type: *H. oregonensis* n. sp.

Hormosomyia oregonensis n. sp.

♂. Length 4 mm. Antennae as long as the body, sparsely haired, 16 segments, the 5th with a stem 2½ times the length of the basal enlargement, which latter has a length nearly three times its diameter, a sub-basal whorl of short, stout setae, a subapical whorl of much longer, slender setae and a sparse apical whorl of shorter, slender setae lying mostly parallel with the axis of the segment. Terminal segment produced, tapering gradually and with a length about five times its diameter and apically an irregular, spindle-shaped appendage. Palpi: moderately long, first segment with a length about three times its diameter, the second and third segments each nearly as long as the first, and the fourth segment nearly twice the length of the third and somewhat dilated.

Mesonotum shiny reddish brown, the submedian lines sparsely haired, the collar, the posterior median area, scutellum and postscutellum mostly yellowish.

Abdomen rather thickly haired, dark brown, genitalia fuscous yellowish.

Wings hyaline, subcosta uniting with the margin near the basal half and the cross-vein nearly parallel with costa, the third vein stout, strongly curved distally and joining the margin well beyond the apex. Fourth vein simple, weaker than the third, obsolescent basally. Fifth vein a little stouter than the third, simple, obsolescent basally; sixth vein simple, moderately stout, strongly curved distally and uniting with the posterior margin a little before the basal half. Halteres mostly pale yellowish.

Legs nearly uniform dark brown, the femoro-tibial and the tibio-tarsal articulations narrowly yellowish. Claws moderately long, stout, curved, unidentate, the tooth with a series of minute denticulations basally. The pulvilli about half the length of the claws.

Genitalia: basal clasp segment moderately long, stout; terminal clasp segment long, tapering triangular when seen from the dorsum, the length being about 2½ times the greatest width. The apex slightly curved and obtuse, and not noticeably chitinized. Dorsal plate short, broad, tapering to a broadly, slightly emarginate, somewhat lobed posterior margin. Ventral plate divided, the lobes broadly quadrangular and sparsely setose. Style short, stout, acute apically.

Type Cecid. 1790.

This remarkable specimen was collected by Mr. F. R. Cole, October 10, 1918, at Forest Grove, Oregon.

Porricondyla consobrina n. sp.

This insect was collected August 3, 1918, at Gull Lake, near Muskoka, Ontario, Canada, by H. S. Parish. The species is very close to *P. juvenalis* Felt, from which it is most easily separated by its somewhat larger size, paler color, reduced chitinization of the abdominal segments and the distinctly longer tips of the lance-like harpes.

♂. Length 2.5 mm. Antennae a little longer than the body, thickly haired, fuscous, the stems whitish transparent, 16 segments, the fifth with a stem two and one-half times the length of the basal enlargement, which latter has a length one-half greater than its diameter. Terminal segment with a length four times its diameter and tapering gradually and nearly uniformly to an acute apex. Palpi: first segment with a length about four times its diameter, the second about as long as the first, a little stouter, the third one-half longer than the second, more slender, and the fourth one-half longer than the third.

Thorax and body a nearly uniform pale yellowish. Halteres yellowish transparent.

Coxae and femora basally of the fore and midlegs pale yellowish, the entire femora and tibiae basally of the hind legs pale yellowish, the remainder of the legs dark brown. Claws moderately long, stout, slightly curved, the pulvilli nearly as long as the claws.

Genitalia: basal clasp segment short, very broad, terminal clasp segment short, greatly swollen and heavily spined apically, dorsal plate long, broad, deeply and narrowly incised, the lobes roundly quadrate and sparsely and coarsely setose apically; ventral plate moderately long, broad, deeply and roundly emarginate, the lobes narrowly rounded, setose. Harpes slender, lance-like, the strongly chitinized apex turned at almost right angles and with a length nearly one-half that of the basal portion.

Type Cecid. 1797.

Porricondyla fultonensis n. sp.

This male was taken probably on June 17, 1916, by Mr. C. P. Alexander at Woodworth's Lake, Fulton County, New York, and forwarded for determination in December, 1918. It falls in the series with sixteen antennal segments and is allied to *P. canadensis* Felt and *P. dilatata* Felt, from both of which it is easily separated by antennal differences as well as other structural characteristics.

♂. Length 2 mm. Antennae a little longer than the body, thickly haired, dark brown, the stems whitish transparent, 16 segments, the 5th with a stem 1¼ the length of the basal enlargement, which latter has a length 2¼ times its diameter. Terminal segment slightly produced and with a subglobose node apically. Palpi: first segment with a length nearly three times its diameter, the second a little shorter, the third at least the length of the second, and the fourth nearly twice the length of the third and somewhat compressed.

Mesonotum dark reddish brown, the submedian lines sparsely haired. Scutellum and postscutellum yellowish orange.

Abdomen sparsely haired, dark brown, genitalia reddish yellow. Halteres mostly dark brown, fuscous yellowish apically. Legs mostly fuscous straw; coxae dark brown. Claws stout, simple, the pulvilli about half the length of the claws.

Genitalia: basal clasp segment broad, sparsely setose, terminal clasp segment as long as the basal clasp segment, slightly curved, moderately stout, tapering at both extremities. Dorsal plate short, broad, rather deeply and roundly emarginate, ventral plate a little longer, broad and broadly rounded.

Type a2953.

Colpodia colei n. sp.

The male described below was collected June 2, 1918, at Forest Grove, Oregon, by F. R. Cole. It is related to *C. americana* Felt, from which it may be most easily separated by its larger size and marked differences in the structure of the genitalia.

♂. Length 2 mm. Antennae one-half longer than the body, sparsely haired, dark brown, ? 16 segments, the fifth with a stem twice the length of the basal enlargement, which latter has a length one-half greater than its diameter. Palpi: first segment with a length three times its diameter, second as long as the first, stouter, the third one-half longer than the second, more slender, and the fourth one-half longer than the third, more slender.

Mesonotum dark brownish red. Scutellum and postscutellum mostly pale yellowish.

Abdomen yellowish brown. Halteres pale yellowish.

Legs a nearly uniform pale straw. Claws moderately long, stout, unidentate, the pulvilli nearly as long as the claws.

Genitalia: basal clasp segment short, stout, terminal clasp segment short and greatly swollen, apically pectinate. Dorsal plate moderately long, deeply and narrowly incised, the lobes broadly rounded. Ventral plate long, incised, the lobes narrowly rounded. Harpes apparently consisting of two slightly bowed, long chitinous pieces, the tips crossing near the median line and a basal chitinous structure with heavy, sublateral processes extending posteriorly. The structure of the harpes is very different from *C. americana* Felt.

Type C. 1791.

On the Preparation of Hemiptera for the Cabinet.

By H. M. Parshley, Smith College, Northampton, Massachusetts.

Some years ago the Editor of this Journal published a leading article in which he urged the importance of care and neatness in mounting and labeling insect specimens, and no doubt there has been some general improvement in subsequent years, especially in the matter of recording full data. But there is still need for attention to this department of entomological technique, as I am frequently reminded in going over the collections of Hemiptera which pass through my hands. It may seem surprising to note that the worst offenders in this respect

are not to be found among those who pursue the study as an avocation, often interested more particularly in other orders, but rather among the students of agricultural colleges where entomology occupies a large share of attention and each of the various groups of insects presumably receives due notice. Many of these student collectors are to become professional entomologists and yet their instructors, in many cases, fail to insist upon this elementary matter of adequate skill in mounting specimens and preserving them in a condition fit for study. Still, perhaps this is what we might reasonably expect. To my mind this state of affairs is one of the manifestations of the "practical" spirit which is making such notable headway in the state universities—the same spirit which eliminates the study of the classics, elevates every trifling trade to the dignity of an academic pursuit, and in general places the things of the dollar above the things of the spirit. The science of entomology has reached its present state of advancement very largely through the unpaid effort, the labor of love, of enthusiasts, and we may hardly look for any progress that is worth while, in the technique of mounting specimens or in matters of higher import, if entomologists, professional or otherwise, come to be actuated as a class by any spirit other than that of the true *amateur*.

Among the dealers also are many who display a hopeless lack of skill in mounting specimens, probably because of the same fundamental reason; the shining exceptions are invariably men who love the study for itself, quite apart from any commercial interest. In spite of the immense labor involved, it is usually necessary for the purchaser to order his specimens unmounted and to provide his own printed labels, if he is to obtain materials worth keeping. Strange indeed that in the case of dealers practical considerations do not lead to proficiency in the methods required in mounting insects of the various orders. Slovenly mounting is an unmixed, wide spread, and unnecessary evil; poorly mounted specimens are frequently almost worthless for purposes of study and always quite unfit for admission to the collection of the student who feels

any concern for the neatness of his cabinet. How many tedious hours must be spent in relaxing and remounting examples which by reason of extreme rarity or some special scientific interest are withheld from the waste-basket—a fate otherwise well deserved! It requires but little additional effort to prepare specimens properly in the first place, and it is hoped that the suggestions offered below may be of some service in the matter.

In mounting Hemiptera, only the black steel pins of American manufacture should be used. They are of course far superior in every way to the bright brass pins, so liable to corrosion and so prone to bend, and yet some collectors still use the latter. It is true that the steel pins will rust in the presence of moisture, as at the sea-shore or when the collection is stored in a basement, but under the same conditions mould will grow on the specimens and hence undue humidity must always be avoided, aside from the question of pins. It is often recommended that Hemiptera be pinned through the scutellum, but with certain families this is not advisable. In the Reduviidae, for instance, the scutellum is proportionately so small as to be entirely destroyed by a pin otherwise of suitable size for the insect, and in such cases it is usually best to pin through the posterior lobe of the pronotum. The Corixidae, where the scutellum is usually concealed, may be pinned through the right hemielytron, like beetles. For convenience in comparing specimens under the binocular, as well as for aesthetic reasons, the insects should all be set at a uniform distance from the head of pin, with about ¼ the length of the pin projecting above the insect—an oft-repeated injunction but one little heeded. This is to be accomplished with the aid of the pinning block described below. As it is often necessary to examine the hind wings and dorsal surface of the abdomen, a specimen or two of each sex in every species should be pinned with the wings unfolded, but not spread on a setting board, an artificiality not needed in mounting Hemiptera. Specimens so small as to be injured in the least by a No. 2 pin should be mounted on points, *e. g.*, almost all Miridae, Antho-

coridae, Saldidae, etc. Disregard of this rule, which is not uncommon, results either in badly damaged specimens, or the use of inconveniently fine pins, or both.

There are many forms of double mounts, recommended for use in mounting small insects. For Hemiptera I find the cardboard point most suitable, the others clumsy in appearance as compared with the minute specimens which they are designed to support, and otherwise objectionable. But there are points and points! Thin paper is not at all suitable, though often used; extremely large or extremely small points are alike bad; celluloid is refractory in several ways. A rather heavy white bristol board of the very best quality may be recommended as the finest material. This should be cut in strips 7-8 mm. in width, from which the elongated triangular points are easily made with scissors, the tips of varying widths from sharp to blunt depending on the form and size of the insect to be mounted. The point should be placed on a No. 3 black pin at a height slightly less than that of ordinary pinned insects, and the tip bent sharply downward so that it may be affixed to the right side of the insect with a minute quantity of adhesive. By this method of mounting, the entire surface of the specimen, except a part of one side, is in full view—a great and obvious advantage, but it is rare indeed to meet with material thus prepared. In the few cases where the form of the body does not lend itself to this method of mounting, a very narrow point may be used, so placed as to conceal as little of the ventral surface as possible. The best adhesive material, in my experience, is white shellac, which may be obtained in dissolved form at hardware stores. By a little manipulation, drying or thinning with absolute alcohol according to circumstances, a consistency may be obtained such that the specimens will remain in place immediately upon affixing. The fixative should be very restricted in quantity, so that the student may be spared the labor of experimenting with various solvents in the effort to bring to light the imbedded specimen.

For fixing specimens, points, and labels at uniform heights on the pins, some form of pinning block is a necessity. I have

found a metal block superior in many respects to the more common wooden kind. It is a cylindrical piece of brass, 5 cm. in diameter by 4 cm. in height, with three numbered holes, bored very carefully with a 1.5 mm. drill to the following exact depths: No. 1, 27 mm. for fixing points; No. 2, 17 mm. for locality labels; No. 3, 10 mm. for adjusting the height of specimens by inserting the head of the pin.

Most collectors now label their specimens with locality and date of collection, but there are still those who omit to mention the collector, perhaps because of embarrassment at seeing such frequent repetition of their own names. This natural feeling of modesty should, however, be repressed, since it is frequently of the utmost importance for the student to know who the collector is. Very often it is desirable to write to the collector for further information regarding some specimen under examination, but more important than this is the fact that the collector's name indicates definitely the ultimate authority, the person responsible for the record. There is unfortunately a wide variability among collectors in the care which they bestow upon their specimens and hence in the reliance which can be placed on their data, so that in the presence of specimens indicating unusual distribution, for instance, the student has every reason to require the collector's name. As an instance in point, might be cited certain specimens of Hemiptera which came to my notice some time ago. The data accompanying these specimens indicated an occurrence far beyond the known range of the species, and I would have viewed the case with some suspicion had not the collector's name, printed on the labels, been that of a Coleopterist well known for his extremely careful methods of work.

One of the finest aspects of our science is the opportunity for co-operation which it affords. Most entomologists are specialists of necessity and all frequently meet with materials which would be of great value to others, if collected and preserved with care. It may steal some attention from one's especial pursuit to learn and practice faithfully the methods of others, but it would seem most decidedly worth while, most certain to advance the study of entomology in general.

ENTOMOLOGICAL NEWS.

PHILADELPHIA, PA., OCTOBER, 1919.

The Resting Place of Collections.

If possible, decide during your life time what you wish done with your collection after your death, and make a will. If you don't do this the collection will probably go to the very place you would least like to have it; or it may go to the devil via the *Anthrenus* route.

Do not give it or will it on condition that it be kept intact, as that is a most foolish form of egomania and will defeat your wishes and make the collection a source of trouble wherever it is, and it will be practically neglected.

You must trust some one and why not trust the entomologists that will have charge of it? A collection that is not growing and added to, unless it contains types, is surely a dead one. Imagine a museum with numerous collections to be kept intact and separate, and examining all of them, one after the other, for purposes of study. Memorials should take some other form: perhaps special pin labels and a good picture of the donor, displayed in the museum, suitably inscribed. There is a tendency in these days to keep holotypes separate and this would also make the intact collection of less use for study. There are many excellent reasons for our advice and a number of cases in illustration could be cited, but space forbids.—H. S.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

The Occurrence of Eurema mexicana Boisd. in Illinois. (Lepid.).

The capture of *Eurema mexicana* Boisd. in Illinois is so uncommon an occurrence that a few notes on the subject are perhaps not out of place.

Dr. Henry Skinner, in his Synonymic Catalogue of the North American Rhopalocera, listed this species as occurring in Mexico, the extreme southwestern states and occasionally in Nebraska, Iowa and

Illinois. Dr. H. G. Dyar records the species from Mexico and on the authority of Dr. Skinner from the Mississippi Valley. Dr. W. J. Holland says the species is abundant in Mexico, common in Arizona and not uncommon in Texas.

On October 18 and 19, 1911, the writer took fourteen specimens of this species at Champaign, Illinois. Prior to that time and since then no additional specimens of the species have been taken. My attention was first attracted to this butterfly because of its slow low flight, frequently interrupted by short stops among the grasses on the ground. Any number of specimens of this pierid might have been captured as they were flying in flocks as certain other butterflies do during migrations. The butterflies were flying in a southwesterly direction.—THEODORE H. FRISON, Champaign, Illinois.

The Cause of the Delay of Publication of the Selys Catalogue.

The publication of the *Catalogue des Collections Selys* has been completely stopped during the war because, in order to proceed with it, it would have been necessary to submit it to the odious German censorship.

It was not that there was ever any fear that authorization to publish would have been refused us. The enemy, on the contrary, would have asked nothing better than to be able to show publications made in Belgium; he would have drawn an argument from them to defend his bad cause and make the world believe that the sufferings of the Belgian people were greatly exaggerated, since the intellectuals could continue their work under the shield of the magnanimous occupant!

Besides, ever rapacious, he found in the conditions regulating authorizations a source of benefices: whoever published must deliver to the censor a certain number of copies and when works of a certain commercial value were in question, it was extortion erected into a system. Moreover, distribution of copies could only take place through the German booksellers who centralized everything at Leipzig, from which place delivery was made to foreign countries.

It seemed, in these circumstances, neither dignified nor patriotic (and never would we have consented) to submit the publication of the scientific monument erected to the memory of the great Belgian, that Edm. de Selys Longchamps was, to such shameful merchandising.

We do not think, moreover, that the delay caused by the war to so many publications, begun or in preparation, constitutes a scientific calamity. Science, who is sometimes invoked to an extent beyond her higher and imprescriptible rights, is rarely injured by delays of publication; often she gains thereby, for the works deferred are frequently better, more finished, more matured. That *scientists* declare themselves injured we willingly admit, but that has nothing in common

with the interest of *science* herself. There is a confusion here which is often desired and which it is good to dissipate. Be that as it may, when priority is concerned, the interest of describers is entirely worthy of consideration; we guard ourselves from misconception and we honor the more those whose sense of their dignity and their patriotism has caused them to decide to impose upon themselves the great sacrifice of deferring the publication of a description of a species or of a more important scientific discovery.

It is fitting, and we make it a duty to ourselves, to signalize the case of one of our most distinguished collaborators, Dr. F. Ris, of Rheinau. The printing of his masterly work on the Libellulinae was completed in 1916 and the last fasciculus could only be distributed today, March 1, 1919. Many descriptions of new species have lost priority by the fact of this delay. We think that there is ground for establishing the rights of Dr. Ris in certain cases and we beg our colleagues to examine them and to act toward him in all equity, now that the quite exceptional cause of the delay is known to all.—G. Severin, Conservator at the Musée Royal d'Histoire Naturelle de Belgique. [Translated.]

Abundance of Cicadas in Beluchistan.

Apropos of the present year as a 17-year Cicada year the following: "At Quetta, from the 15th to the end of June, 1918, there was a regular plague of Cicadas. A certain road, running out of Quetta for about five miles, was lined with small mulberry and a few willow and other trees. The trunks and branches of these trees were so closely studded with the Cicadas that they appeared gnarled and discolored. When a motor car passed along the road the insects continually rose in a swarm, resembling a swarm of large bees. The ground on either side of the road was pitted with the holes of the pupae, and the empty pupal cases clung in dozens to every plant and shrub. In the evening the noise near the trees was deafening. The imagines were about two inches long, colored yellow with red markings, but unfortunately I was unable to identify the species. On being disturbed they squirted a clear white fluid from the abdomen. If a drop of this entered the eye it caused smarting and irritation. In spite of this dogs, cats and chickens all eat them with relish. At about the end of June they began to die off and the ground under the trees was littered with their bodies. Some of the smaller trees were so damaged by their attacks that they lost their leaves.—F. B. Scott in Entom., London, April, 1919.

Changes of Address.

Charles W. Leng, Secretary of the New York Entomological Society and Research Associate in the American Museum of Natural History, has been appointed Director of the Museum of the Staten Island Institute of Arts and Sciences.

EDMUND H. GIBSON has resigned his position with the U. S. Bureau of Entomology and is entering upon a new field of endeavor for himself. Believing that entomology can be put on a dignified professional business basis the same as law, medicine, engineering, etc., he is taking the initial step and believes that after a certain amount of pioneering work the field should open up to other entomologists. Mr. Gibson's headquarters, for the time being, will be Alexandria, Virginia. His professional card is worded "Consulting Entomologist and Agricultural Engineer."

Prof. Bruner's Retirement.

Prof. Lawrence Bruner, eminent for his work on Orthoptera of North, Central and South America, has retired from active charge of the department of entomology in the University of Nebraska, according to *Science* for August 30, 1919. Myron H. Swenk succeeds him in this office and in that of State Entomologist.

Memorials to the late F. D. Godman.

Memorials in the form of a bronze tablet, with medallion portraits of Dr. Godman and his lifelong associate, Osbert Salvin, to be placed in the Natural History Museum at South Kensington, and of a "Godman Memorial Exploration Fund" are planned, according to the same number of *Science*. The initiative for the tablet is due to a committee of which Lord Rothschild is chairman; the Fund has its beginning in an offer of £5000 from Dame Alice Godman and her two daughters. Contributions received by the Committee over and above the amount required for the tablet will be added to the exploration fund.

The committee will welcome the co-operation of Americans. Contributions should be sent to Mr. C. E. Fagan, honorary treasurer, Godman Memorial Fund, Natural History Museum, Cromwell Road, London, S. W. 7.

Notes on the Occurrence of Schizax senex in California (Col., Cerambycidae).

The fascination of the deserts of Southern California which leads visitors to her grim fastnesses to a longing to return again and again, is particularly strong to the entomologist who revels in the strange fauna as well as the glowing sunsets with their ever changing colors and mysterious shadows. Like the prospecting "desert rat," who fares forth in search of mineral wealth, the collector of insects is constantly buoyed up by the hope of a lucky strike. New species may be found and rare treasures of insect life lure one back to another camp in some still unexplored canyon.

From the glowing coals of a mesquite camp fire near Palm Springs I was led to the discovery of a rare cerambycid which I do not find

recorded from California previously. Large brush piles furnished a plentiful supply of fuel and led me to take a few sticks home to try its burning qualities in a stove. These sticks laid in the wood shed until December, when I tried splitting one of the sticks and greatly to my surprise found neatly packed away in a cell next to the outer bark a beetle new to my experience. This stranger turned out to be *Schizax senex* Lec., previously recorded from Arizona.

The galleries and cells of *Schizax* were most numerous in the limbs ranging in size from one-half to one inch in diameter. The cells were very little larger than the gallery and extended to the thin outer bark. In December there were both pupae and adults in the cells, but in February all were adults fully matured and with normal coloring.

Other mesquite brush heaps of the same age about four miles distant showed no signs of *Schizax* borings, though the first pile yielded about fifty pairs. From the above I am inclined to think that this beetle is local in occurrence.

From some of these infested boughs which I took home and placed in a cage (home was then in Pasadena) the beetles emerged from March 3 to 25.—J. O. MARTIN, Berkeley, California.

Entomological Literature.

COMPILED BY E. T. CRESSON, JR., AND J. A. G. REHN.

Under the above head it is intended to note papers received at the Academy of Natural Sciences, of Philadelphia, pertaining to the Entomology of the Americas (North and South), including Arachnida and Myriopoda. Articles irrelevant to American entomology will not be noted; but contributions to anatomy, physiology and embryology of insects, however, whether relating to American or exotic species, will be recorded.

The numbers in **Heavy-Faced Type** refer to the journals, as numbered in the following list, in which the papers are published.

All continued papers, with few exceptions, are recorded only at their first installments.

The records of papers containing new genera or species occurring north of Mexico are all grouped at the end of each Order of which they treat.

For records of Economic Literature, see the Experiment Station Record, Office of Experiment Stations, Washington. Also Review of Applied Entomology, Series A. London. For records of papers on Medical Entomology, see Review of Applied Entomology, Series B.

4—Canadian Entomologist, London, Canada. **5**—Psyche, Cambridge, Mass. **7**—Annals of The Entomological Society of America, Columbus, Ohio. **9**—The Entomologist, London. **12**—Journal of Economic Entomology, Concord, N. H. **13**—Journal of Entomology and Zoology, Claremont, Calif. **16**—The Lepidopterist, Salem, Mass. **17**—Lepidoptera, Boston, Mass. **20**—Bulletin de la Societe Entomologique de France, Paris. **21**—The Entomologist's Record, London. **33**—Annales de la Societe Entomologique de Belgique, Brussels. **34**—Bulletin de la Societe Entomologique de Belgique, Brussels. **35**—Proceedings of the South London Ento-

mological & Natural History Society, London. **36**—Transactions of the Entomological Society of London. **50**—Proceedings of the United States National Museum, Washington. **52**—Zoologischer Anzeiger, Leipsic. **54**—Proceedings of the Biological Society of Washington, D. C. **68**—Science, Lancaster, Pa. **71**—Novitates Zoologicae, Tring, Englanad. **76**—Nature, London. **77**—Comptes Rendus des Seances de la Societe de Biologie, Paris. **78**—Bulletin Biologique de la France et de la Belgique, Paris. **82**—The Ohio Journal of Science, Columbus. **98**—Annals of Tropical Medicine and Parasitology, Liverpool. **99**—Bulletin du Museum National d'Histoire Naturelle, Paris.

GENERAL. Cockayne, E. A.—The relation between the secondary sexual characters and the gonads and accessory sexual glands in insects. **36,** 1916, 336-42. **Cockerell, T. D. A.**—The variations of insects. **4,** 1919, 121-3. **Collinge, W. E.**—Wild birds and distasteful insect larvae. **76,** ciii, 404, 483. **Crampton, G. C.**—A phylogenetic study of the mesothoracic terga and wing bases in Hymenoptera, Neuroptera, etc. **5,** xxvi, 58-64. **Escherich, K.**—Zeitschrift fur angewandte entomologie, IV, Heft 3. **Ford, H. D.**—Mould on insects. **9,** 1919, 167. **Krecker, F. H.**—The fauna of rock bottom ponds. **82,** xix, 427-74. **Labitte, A.**—Resistance vitale de quelques larves d'insectes. **99,** 1917, 399-400. **Moignic & Norero**—Recherches sur la distribution dans le poumon des huiles injectees par la trachee. **77,** lxxxii, 1002-4. **Rabaud, E.**—L'immobilisation reflexe et l'activite normale des arthropodes. **78,** liii, 1-149. **Rothschild, L.**—On the naming of local races, subspecies, aberrations. seasonal forms. etc. **36,** 1918, 115-16. **Schunk, C. A.**—Formaldehyde for "mould" on insects. **9,** 1919, 137-8. **Speyer, E. R.**—Wild birds and distasteful insect larvae. **76,** ciii, 445-6.

PHYSIOLOGY, GENETICS, ETC. Bridges & Mohr—The inheritance of the mutant character "Vortex" (Genetics, iv, 283-306). **Gowen, J. W.**—A biometrical study of crossing over . . . in the third chromosome of Drosophila (Genetics, iv, 205-250). **Mohr, O. L.**—Character changes caused by mutation of an entire region of a chromosome in Drosophila (Genetics, iv, 275-282).

ARACHNIDA & MYRIAPODA. Brolemann, H. W.—Quelques indices d'evolution chez les Myriapodes (Trav. Inst. Zool. Univ. Montpellier, Mem. No. 28). **Clayton, F.**—Mimicry in spiders (Jour. Bombay Nat. Hist. Soc., xxvi, 302-3). **Houssay, B. A.**—Action physiologique du venin des scorpions (Buthus quinquestriatus et Tityus bahiensis) (Jour. Phys. Path. Gen., xviii, 305-317). **Leitao, M.**—Drassodeas do Brasil (Arch. Escola Sup. Agr. Med. Veter., Nictheroy, E. do Rio, Brazil, ii, 17-75).

NEUROPTERA. Butterfield, W. R.—Note on Protura and how to collect them (The Museum Journal, xviii, 196-7). **Longinus Navas, R. P.**—Insecta nova [Neotropical] (Mem. Pont. Ac. Rom. d. Nuovi Lincei, iii, 1-22). **Howe, R. H.**—A list of dragon-flies collected at Wareham, Mass., during 1911-1913. **5,** xxvi, 65-8. **Rothschild, N. C.**—Convergent development among certain ectoparasites. **36,** 1916, cxli-clvi. **Morrison, E. R.**—The may-fly ovipositor, with notes on Leptophlebia and Hagenulus. **4,** 1919, 139-46.

ORTHOPTERA. Chopard, L.—Diagnoses d'especes nouvelles d'Orthopteres [Neotropical]. **20,** 1919, 153-4. **DuPorte, E. M.**—The propleura and the pronotal sulci of the O. **4,** 1919, 147-53. **de Kelper, W.**—Causerie sur le grillon champetre. **34,** i, 38-47. **Labitte, A.**—Une extraordinaire aberration genitale d'un orthoptere acridide, le Pamphagnus numidicus. **99,** 1917, 401. **Roth, H. L.**—Observations on the growth and habits of the stick insect, Carausius morosus; intended as a contribution towards a knowledge of variation . . . . **36,** 1916, 345-86. **Walker, E. M.**—On the male and immature state of Grylloblatta campodeiformis. **4,** 1919, 131-9.

HEMIPTERA. Drake, C. J.—On some Tingidae new to the fauna of Canada. **4,** 1919, 159-60. **Moore & Hirschfelder**—An investigation of the louse problem (Pediculus corporis). (Res. Pub., Univ. of Minnesota, viii, No. 4.) **Peterson, A.**—Some studies on the eggs of important apple plant lice (New Jersey Ag. Exp. Sta., Bul. 332). **Stoll & Shull**—Sex determination in the white fly (Genetics, iv, 251-260). **Strindberg, H.**—Zur entwicklungsgeschichte der oviparen cocciden. **52,** 1, 113-138.

Drake, C. J.—On some N. A. Tingidae. **82,** xix, 417-21. **Hart, C. A.**—The Pentatomoidea of Illinois, with keys to the Nearctic genera. (Illinois Nat. Hist. Survey, Bul. xiii, 157-223.) **McAtee, W. L.**—A new genus for Tettigonia trifasciata (Eupterygidae). **54,** xxxii, 121-4.

LEPIDOPTERA. Beutenmuller, W.—Catocala aspasia and varieties. The larva of Melipotis jucunda. **16,** iii, 110; 111. **Burke, H. E.**—Notes on the California oak worm, Phryganidia californica. **10,** xxi, 124-5. **Burrows, C. R. N.**—Dwarf lepidoptera. **21,** 1919, 89-90. **Busck, A.**—A microlepidopteron injurious to Avocado. **10,** xxi, 125-6. **Buxton, P. A.**—On the protocerebrum of Micropteryx. **36,** 1917, 112-53. **Chapman, T. A.**—The rein-sheath in Plebeiid blues. Resting attitudes in some L., examples of recapitulation in habit. Micropteryx entitled to ordinal rank; Order

Zeugloptera. The evolution of the habits of the larva of Lycaena arion. **36,** 1916, 297-300; 301-9; 310-14; 315-21. Further notes on recapitulatory attitudes in L. **36,** 1917, 338-48. **Cockayne, E. A.**—Gynandromorphous Agriades coridon, A. coridon ab roystonensis. Gynandromorphous L. **36,** 1916, 243-63; 322-35. Condition of the scales in the leaden males of Agriades thetis and other Lycaenids. **36,** 1917, 165-8. **Comstock, J. A.**—Collecting in the Tehachapis. **16,** iii, 112 (cont.). **da Costa Lima, A.**—Nota sobre o microlepidoptero Pyroderces rileyi. (Arch. Escola Sup. Agr. Med. Veter., Nictheroy, E. do Rio, Brazil, ii, 75-8.) **Dodge, E. A.**—Catocala notes. **17,** iii, 54. **Durrant, J. H.**—Collation of the corrected genera of the Tantamen and "Verzeichniss bekannter Schmetterlinge" of J. Hubner. (Sep. of Ent. Record, xxxi, No. 5.) **Ehrmann, G. A.**—Collecting in a silent city. **17,** iii, 51. **French, G. A.**—Catocala ulalume, a correction. **4,** 1919, 130. **Gautier, C.**—Recherches physiologiques et parasilologiques sur les lepidopteres nuisibles. Parthenogenese chez Apanteles glomerutus. **77,** lxxxii, 1000 2. **Hewlett, E. P.**—Notes on Samia rubra. **17,** iii, 50-1. **Joicey, J. J.**—On a collection of Heliconine forms from French Guiana. **36,** 1916, 412-31. **Joicey & Kaye**—Notes on a large Heliconine collection made in French Guiana in 1917. **36,** 1918, 347-53. **McIndoo, N. E.**—The olfactory sense of lepidopterous larvae. **7,** xii, 65-84. **Merritt Hawkes, O. A.**—On the factors which determine the cocoon colour of Plusia moneta and other L. **36,** 1916, 404-11. **Meyrick, E.**—Descriptions of So. Am. Micro-L. **36,** 1917, 1-52. **Mosher, E.**—Notes on lepidopterous borers found in plants, with special reference to the European corn borer. **12,** xii, 258-68. **Reiff, W.**—Notes on [Marumba modesta, Callosamia calleta, Cethosia hypsina]. **17,** iii, 52-3. **Rothschild, L.**—Supplementary notes on the review of Houlbert and Oberthur's monograph of Castniinae, by Talbot and Prout. List of types of L. in the Tring Museum. **71,** xxvi, 1-27; 193-251. **Sich, A.**—A beginner's remarks on the Tortricina. **35,** 1918-19, 11-14. **Smulyan, M. T.**—Some observations on the webbing clothes moth (Tineola biselliella). **5,** xxvi, 71-3. **Talbot, G.**—Review of a monograph of the "Castniinae." **71,** xxvi, 28-35. **Traver, J. R.**—Ecological relations of the lepidopterous genus Depressaria. **5,** xxvi, 73-80. **Turati, C. E.**—Variabilita del Parnassius apollo pumilus. E ricerche sull'origine dei Parnassius. (Atti Soc. Italiana, Sci. Nat. . . . Milano, lvii, 29-89.) **Turner, A. J.**—Observations on the lepidopterous family Cossidae, and on the classification of the L. **36,** 1918, 155-90.

Swett & Cassino—Some new Geometrids. **16,** iii, 105-10.

DIPTERA. Cockerell, T. D. A.—Glossina and the extinction of tertiary mammals. **76,** ciii, 265. **Evans, A. M.**—On the genital armature of the female tsetse-flies (Glossina). **98,** xiii, 31-56. **Hawley, I. M.**—A note on temperature in relation to Sciara coprophila. **12,** xii, 271. **Lamb, C. G.**—Falkland Islands D. **36,** 1916, 387-95. **McColloch, J. W.**—Variations in the length of the flaxseed stage of the hessian fly. **12,** xii, 252-5. **Metcalf, C. L.**—A proposed nomenclature for the parts of the posterior respiratory apparatus of dipterous larvae . . . **5,** xxvi, 54-8. **Weiss, H. B.**—Notes on the early stages and larval locomotion of Leia vivittata. **5,** xxvi, 80-2.

Dietz, W. G.—The Streptocera group of the dipterous genus Tipula. **7,** xi, 85-94. **Greene, C. T.**—A new genus in Scatophagidae. **10,** xxi, 126-9. **Hine, J. S.**—Robber flies of the genus Erax. **7,** xi, 103-58. **Malloch, J. R.**—Two new N. A. Anthomyiidae. **54,** xxxii, 133-4. **Parker, R. R.**—North American Sarcophagidae: Flies of the genus Metoposarcophaga. **4,** 1919, 154-8.

COLEOPTERA. Blatchley, W. S.—Change of name (Serica carinata Blatch. to S. evidens n. n.). **4,** 1919, 153. **Bordas, L.**—Nouvelles observations sur l'appareil digestif des Cetoninae. (Bul. Soc. Zool. France, Paris, xlii, 7-12.). **Bugnion, E.**—Le ver luisant provencal. **77,** lxxxii, 994-99. **Burke, H. E.**—Notes on a cocoon making Colydiid. **10,** xxi, 123-4. **Champion, G. C.**—On new and little-known Lagriidae and Pedilidae [some neotropical]. **36,** 1916, 181-242. On new and little known Lagriidae from Tropical America. **36,** 1917, 169-267. **Claassen, P. W.**—Life history and biological notes on Chlaenius impunctifrons (Carabidae). **7,** xi, 95-102. **Dury, C.**—A new Ciside genus with n. sp. from Manitoba. **4,** 1919, 158. **Kerremans, C.**—Descriptions de Buprestides nouveaux [neotropical in part]. **33,** lix, 41-62. **Mellerio, A.**—Observations biologiques faites sur quelques insectes coleopteres. **99,** 1918, 418-19. **Muir, F.**—Notes on the ontogeny and morphology of the male genital tube in C. **36,** 1918, 223-29. **Peschet, R.**—Description d'un Dytiscidae nouveau de l'Amerique du Sud. **20,** 1919, 145-7. **Pic, M.**—Nouveaux C. exotiques [Neotropical in part]. **99,** 1917, 258-63. **Sharp, D.**—Studies in Rhynchophora. IV. A preliminary note on the male genitalia. **36,** 1918, 209-22. **Tower, W. L.**—Mechanism of evolution in Leptinotarsa. (Carnegie Inst. Wash., Pub. No. 263, 382 pp.).

HYMENOPTERA. Bodkin, G. E.—Notes on some British Guiana H. (exclusive of the Formicidae). **36,** 1917, 297-321. **Brues, C. T.**—Note on the genus Liobracon, with the description of a n.

sp. [Neotropical]. **5,** xxvi, 68-71. **Cockerell, T. D. A.**—The antiquity of the Ichneumonidae. **9,** 1919, 121-2. **Crampton, G. C.**—The genitalia and terminal abdominal structures of males, and the terminal abdominal structures of the larvae of "Chalastogastrous" Hymenoptera. **10,** xxi, 129-55. **Lichtenstein & Picard**—Etude morphologique et biologique du Sycosoter lavagnei. Hecabolide parasite de l'Hypoborus ficus. (Trav. Inst. Zool. Univ. Montpellier, Mem. No. 29.). **Morice & Durrant**—Further notes on the "Jurinean" genera of H., . . . **36,** 1916, 432-42. **Reymond, R. B.**—Ueber den gang mit kunstlichen beinen. (Archiv. f. Anat. u. Phys., 1917, Phys. Abt., 222-244.). **Rohwer, S. A.**—Description of a new Cynipoid from Trinidad. **10,** xxi, 156. **Sladen, F. W. L.**—Notes on the Canadian representatives of British species of bees. **4,** 1919, 124-30. The stinging instinct in bees and wasps. **76,** ciii, 325. **Turner, R. E.**—New sp. of H. in the British Museum [some Neotropical]. **36,** 1917, 53-84. **Wheeler, W. H.**—[List of the] ants from the Claremont laguna region. **13,** xi, 38.

Cushman, R. A.—Descriptions of new No. Am. Ichneumon-flies. 50, lv, 517-43. **Gahan, A. B.**—Some chalcid wasps reared from cecidomyid galls. **7,** xi, 159-70. A new sp. of the Serphidoid genus Dendrocerus. **10,** xxi, 121-3. **Rohwer, S. A.**—Descriptions of four new parasitic H. **4,** 1919, 160-2.

REPORT OF THE IMPERIAL ENTOMOLOGIST, 1917-1918. By T. BAINBRIGGE FLETCHER. Calcutta, Supt. Gov't. Printing, India, 1918. (From Scientific Repts. Agr. Res. Inst., Pusa, 1917-18, pp. 84-116, pls. iii-xx.)—In addition to dealing with the insect pests of cotton, rice, sugarcane, indigo, mulberry, fruit, stored grain, wood and lantana, with insecticides, bees, lac and silk, this report tells a familiar story of insufficient assistance and funds, of growing collections and the difficulty of caring for them. The definitely named species in the collection at Pusa have increased from 2221 in 1908 to 6471 in 1918, the Lepidoptera and Coleoptera heading the list in point of numbers.

STUDIES ON THE FRUIT-FLIES OF JAPAN. I. JAPANESE ORANGE-FLY, by Dr. TSUNEKATA MIYAKE Government Entomologist. (From Bulletin Imp. Cent. Agr. Exper. Sta. Japan, II, 2, pp. 85-165, pls. ii-x.) Nishigahara, Tokyo, Feb., 1919.—An elaborate account of the external and internal structure of the various stages of *Dacus tsuneonis* n. sp. (*D. ferrugineus* Kuwana, nec Fabricius), its life history and habits, the methods of control, and descriptions of five other new Japanese species of Trypaneidae. The beautiful plates illustrate all of these topics.

Doings of Societies.

Feldman Collecting Social.

Meeting held April 16, 1919, at the residence of H. W. Wenzel, 5614 Stewart Street, Philadelphia. Seven members present, Pres. H. W. Wenzel in the chair.

Mr. Ernest Baylis, of Frankford, Philadelphia, Pennsylvania, was elected a member.

Diptera. Mr. Hornig said that *Aëdes canadensis* Theob. is now on the wing, taking at this time of the year 31 days to mature from the egg, while at the height of the season it will take about 11 days.

Coleoptera. Mr. Geo. M. Greene recorded seeing *Hydrous triangularis* Say at light during the evening of April 8th, and the next day *Creophilus villosus* Grav. and *Platynus cupripennis* Say on the sidewalk. Mr. H. W. Wenzel mentioned some new varieties of *Cychrus* lately named, after which there was a general discussion on the genus. Mr. H. A. Wenzel exhibited a large series of *Hylecoetes lugubris* Say which he had collected at West Overbrook, Pennsylvania, IV-13 and 14 in a poplar log which he supposed had been dead about a year. The bark was slightly loose and in the sap beneath had found the beetles, just ready to emerge. They bore in the wood similarly to Scolytids, but one peculiarity was noted on the specimens of the wood shown—it is vertically grooved and ridged alternately and all the beetles had emerged (as far as they had gone when found) through the ridges and none in the grooves, though by coming through the latter they would have had less wood to bore through. The sexes are quite unlike and the males have wonderfully feathered palpi which are much larger than the antennae—GEORGE M. GREENE, *Secretary*.

Meeting of May 21, 1919, at the same place. Ten members were present, Dr. J. C. Bradley, of Cornell University, and Mr. John H. Hodgins, of this city, visitors. President H. W. Wenzel in the chair.

Dr. Bradley detailed collecting trips he had taken to the cañons of the Colorado Desert, Southern California, in December, 1917, and March, 1918.

Coleoptera. Dr. Castle read a letter from Mr. Leng, dated April 7, saying he had seen the records in the minutes of the January meeting, published in Ent. News xxx, p. 120, 1919, relative to *Scaphinotus ridingsii* Bland. He enclosed a separate in which he described this form which should be *S. ridingsii monongahelae* Leng. Dr. Castle also had a newspaper clipping from "The San Francisco Examiner," March 16, 1919, on "Experts hunt winter home of ladybirds," in which was described the manner of collecting the Coccinellids in winter time after they hibernate in great numbers under the pine needles at the snow line in the mountains of California. These are placed in cold storage and later liberated in the orange groves to destroy the aphids

upon which they feed. Mr. Hornig said since catching *Carabus nemoralis* Mull. in Germantown, Philadelphia, he buried on May 16th a saucer containing molasses in his yard and the next morning had one specimen and since then has taken some each day. Mr. H. W. Wenzel said, in continuation of his son's communication of last meeting on *Hylecoetus lugubris* Say, that his specimens were found just emerging on April 13th and 14th, and Say in his description of this species says it was caught flying in the vicinity of New Harmony, Indiana, on April 16th. Mr. Geo. M. Greene exhibited *Liodes basalis* LeC. from Wissahickon Creek at Chestnut Hill, Philadelphia, V-19-'19, from decayed wood, *Exomius pellucidus* Boh., same place and date, running on the ground, and *Hoplia trifasciata* Say (all males), same place, V-14-'19, on nettle and specimens of the last species from Falls Church, Virginia, V-20-'17 (also all males).

Diptera. Mr. Hornig stated that he had recorded *Aëdes curriei* Coq. as new to this locality and now it has almost disappeared and in its place is *A. onondagensis* Knab and Dyar; the imagoes are difficult to distinguish, but the larvae are very different. Mr. Geo. M. Greene exhibited *Strauzia longipennis* Wied. from Wissahickon Creek at Chestnut Hill, Philadelphia, V-14 and V-19-'19.

Hymenoptera. Mr. Baylis exhibited a specimen of *Vespa crabro* Linn. which he had found dead at Frankford, Philadelphia, V-18-'19.

Lepidoptera. Mr. Geo. M. Greene recorded *Anthocharis genutia* Fabr., both sexes, common, flying along the Wissahickon Creek at Germantown, Philadelphia, V-5-'19.—Geo. M. Greene, *Secretary.*

American Entomological Society.

Meeting of February 27, 1919, in the hall of The Academy of Natural Sciences of Philadelphia. Fifteen persons present, Vice-President Rehn presiding.

Coleoptera. Mr. Laurent exhibited *Alaus oculatus* Linn. and full grown larva of same, the latter taken from the roots of common silver maple at Mt. Airy, Philadelphia, Pa., February 12th. Stated that he has taken imagoes of this species in May, June, July and August.

Lepidoptera. Mr. Baylis exhibited an odd light form of *Melitaea phaeton* Drury which he collected in Philadelphia, June 29, 1918. The differences from the common type are more noticeable on the under side of the hind wings.

Diptera. Mr. Baylis exhibited a Tipulid which had been impressed in paper apparently when the paper was made. Mr. Hornig said he had seen *Chironomus* flying yesterday over water in Germantown, Philadelphia.

Orthoptera. Mr. Rehn made some remarks on the Acridid genus *Derotmema* which he had been studying. The speaker discussed the area of distribution of the genus, the various forms, and the charac-

ters of chief use in separating them, as well as their respective areas of distribution and some of the questions of synonymy involved. The results of his work have been reached after examining over eight hundred specimens of the genus. The distributions were shown by means of a blackboard sketch and their habitats by lantern slides.

General. Mr. Cresson exhibited a copy of Say's "American Entomology," his first attempt, published in 1817, containing six plates. There is only one other copy known. The regular edition of this work is dated 1824. Also a copy of Say's "Descriptions of new species of North American Insects," most of which had previously been published in the Disseminator.

Meeting of April 24, 1919, in the same place; ten persons present, President Dr. Skinner presiding.

Mr. W. J. Coxey, of Camden, New Jersey, was elected a member.

Orthoptera. Mr. Rehn made some remarks, illustrated by specimens and a map, on the distribution of certain species and races of the genera *Mestobregma* and *Metator*. The effectiveness of the Rocky Mountains as a barrier in controlling the distribution of insects was discussed.

Diptera. Mr. Geo. M. Greene recorded seeing a specimen of *Callicera johnsoni* Hunter flying in West Fairmount Park, Philadelphia, in the morning of April 21st.—Geo. M. Greene, *Recording Secretary.*

Entomological Section, Academy of Natural Sciences of Philadelphia.

Meeting of March 27, 1919, nine persons present; in the absence of the Director and Vice-Director Dr. Skinner presided.

W. J. Coxey, of Camden, New Jersey, and R. L. Haines, of Moorestown, New Jersey, were elected member and contributor respectively.

Lepidoptera. Mr. West exhibited the larvae of *Catocala relicta* Wlk. from Philadelphia, VI-30-'13, and *C. aspasia Streck.* from Philadelphia, VI-21-'13. Dr. Skinner remarked on the genus saying many people had been interested in it and had bred the species and lately the interest has been renewed by the memoir published by the American Museum of Natural History; he expects that the various forms will finally be placed in the near future. Dr. Skinner exhibited *Pyrameis carye* Hübn. and the aberration *muelleri* Letch., the latter collected at Los Angeles, California, VII-6-'13, by V. Duran; also an aberration of *Argynnis myrina* Cram. from Glenside, Pennsylvania, and a peculiar ♀ of *Colias eurydice* Boisd. from Topango Canyon, Los Angeles County, California, VIII-6-'14, collected by V. Duran.

General. Mr. Rehn exhibited the differences between the German Zeiss binocular microscope (duplicated in America by the Bausch and Lomb Co.) and the American Spencer, saying the latter is the more satisfactory and far superior to the other.—Geo. M. Greene, *Recorder.*

EXCHANGES.

This column is intended only for wants and exchanges, not for advertisements of goods for sale. Notices not exceeding three lines free to subscribers.

☞ **These notices are continued as long as our limited space will allow; the new ones are added at the end of the column, and only when necessary those at the top (being longest in) are discontinued.**

Wanted—Tipulidae from all parts of North America. Material from the far North especially desired. Will buy or exchange. Dr. W. G. Dietz, 21 North Vine Street, Hazleton, Pa.

Aradus.—I am engaged on a review of the North American species of this Hemipterous genus and shall be glad to examine specimens from any part of the continent. Determinations in return for specimens needed in my work.—H. M. PARSHLEY, Smith College, Northampton, Mass.

For Exchange—Live pupae of *E. tityrus* and *H. tenuis*. What have you to offer? Joseph Syrovy, Jr., 4119 W. 21st Place, Chicago, Illinois.

Coleoptera. Cotypes of *Chrysobothris falli* VanDyke for exchange for rare Buprestidae, domestic or foreign. Also other species for exchange. Richard T. Garnett, 3600 Broadway, Oakland, California.

Noctuidae.—Will purchase, or exchange Lepidoptera from western states for the rarer noctuid moths of N. Am. Desire Hampson's work on this family, also other literature. Chas. A. Hill, Hamilton Apts., No. 310, Omaha, Nebraska.

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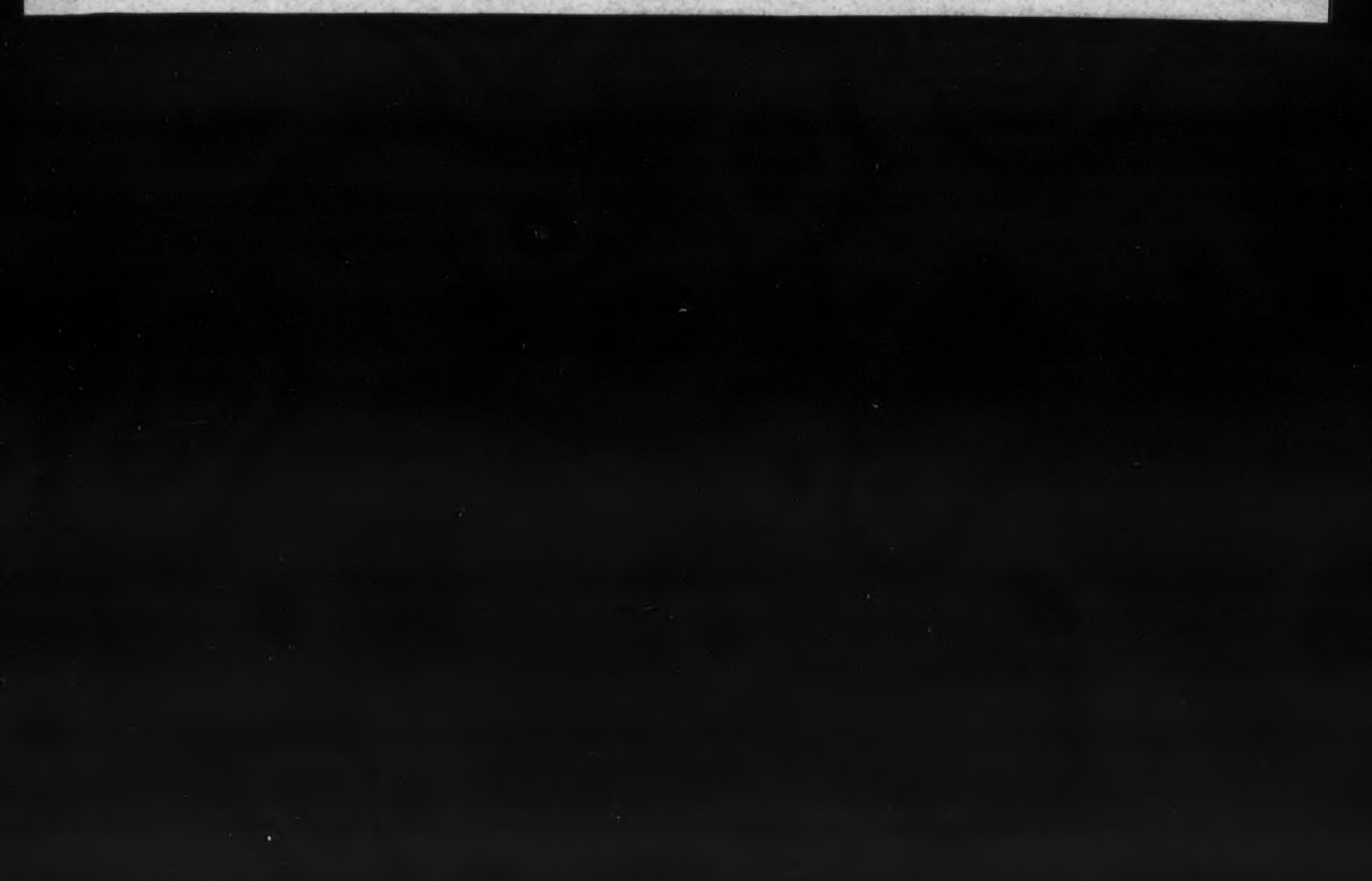

TO STUDENTS OF NORTH AMERICAN COLEOPTERA

Realizing the great desire of all students of our Beetles to possess the various papers of Dr. Le Conte, F. E. Melsheimer, S. S. Haldeman, W. F. Rogers, P. R. Uhler, and D. Ziegler, originally published in the now almost unobtainable Volumes 1-8 of Proceedings of Academy of Natural Sciences of Philadelphia, 1843 to 1856, Mr. Laurence R. Reynolds and Mr. Sherman are considering the reprinting of these papers on Coleoptera, 58 titles in all, embracing about 500 pages of text with 2 plates. The eight complete volumes in question would easily bring $100.00 if they could be obtained by themselves.

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